EXHIBIT 77

REDACTED

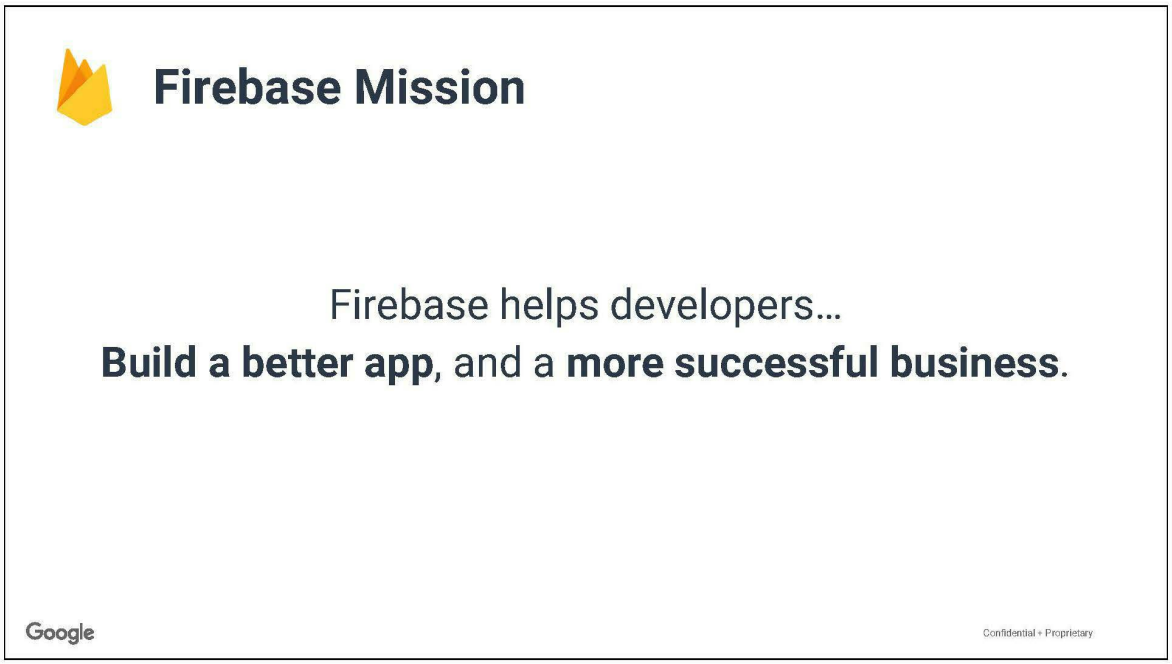
MAO DECLARATION

OPPOSITION TO SUMMARY JUDGMENT

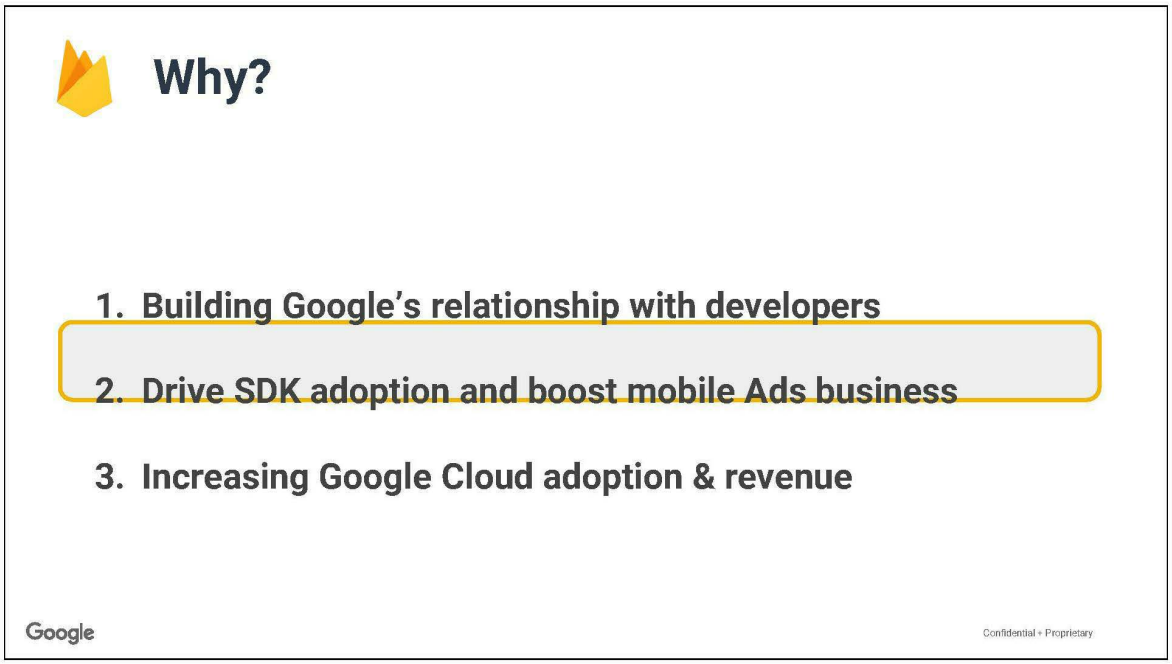
Firebase Growth

Feb 2017

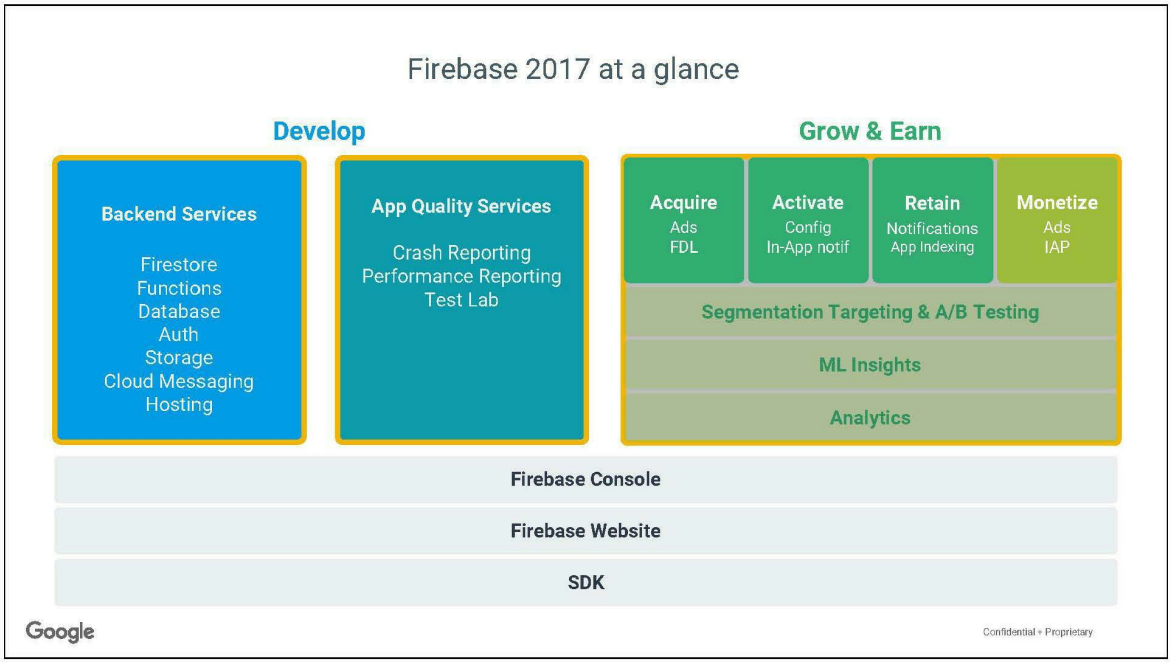
Francesco Nerieri - [redacted]


Firebase Mission
Firebase helps developers...
Build a better app, and a more successful business.
Google
Confidential + Proprietary

Firebase Mission
Firebase helps developers…
Build a better app, and a more successful business.
Develop
Grow & Earn
Google
Confidential + Proprietary



Ads Attribution: The Conversion Event Data it collects lets our Ads customers track the performance of their campaigns.
Making better products: In-app behavioral data is valuable for enhancing Google products through ML.
ant to highlight the top 3 goals that we're really focusing on in 2017, from the perspective of Google's business.


Firebase 2017 at a glance
Develop
Grow & Earn
Backend Services
Firestore
Functions
Database
Auth
Storage
Cloud Messaging
Hosting
App Quality Services
Crash Reporting
Performance Reporting
Test Lab
Acquire
Ads
FDL
Activate
Config
In-App notif
Retain
Notifications
App Indexing
Monetize
Ads
IAP
Segmentation Targeting & A/B Testing
ML Insights
Analytics
Firebase Console
Firebase Website
SDK
Google
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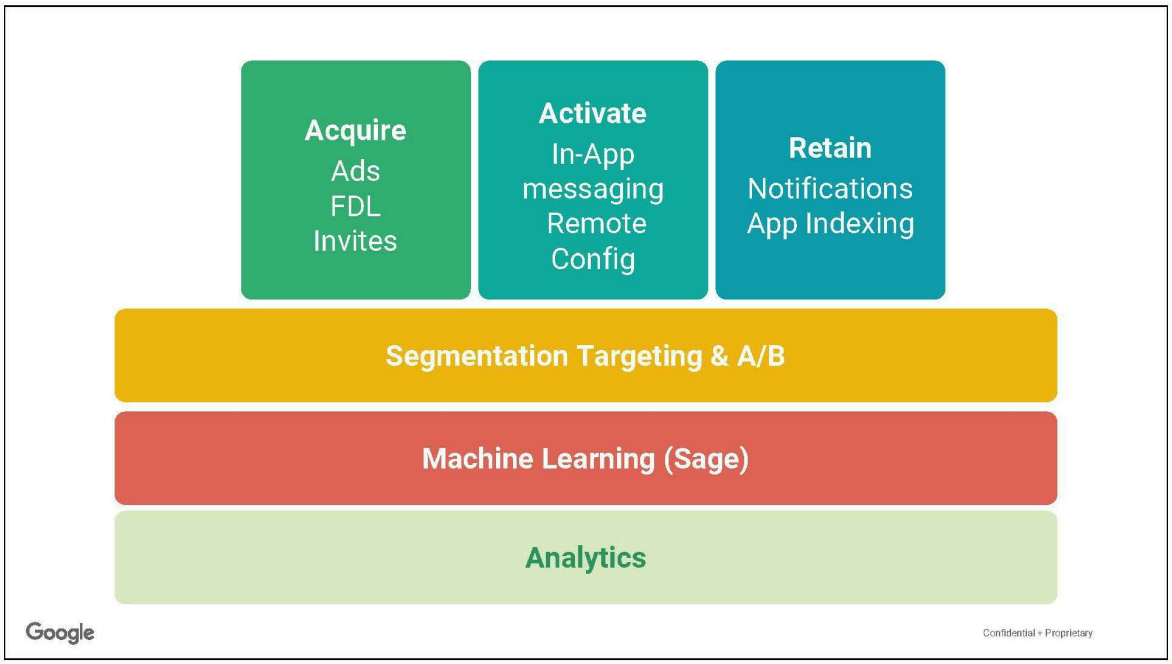
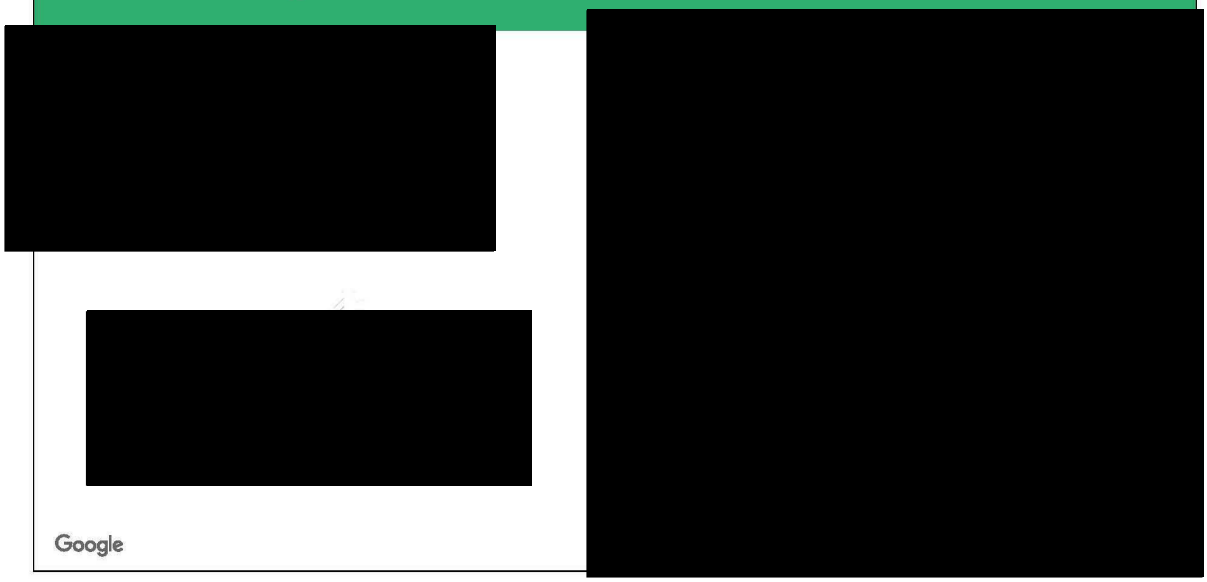

Acquire
Ads
FDL
Invites
Activate
In-App messaging
Remote Config
Retain
Notifications
App Indexing
Segmentation Targeting & A/B
Machine Learning (Sage)
Analytics
Google
Confidential + Proprietary

ACQUIRE: **Dynamic Links & Invites**



Deeplinks matter to growth performance

[redacted]

[redacted]

[redacted]

[redacted]

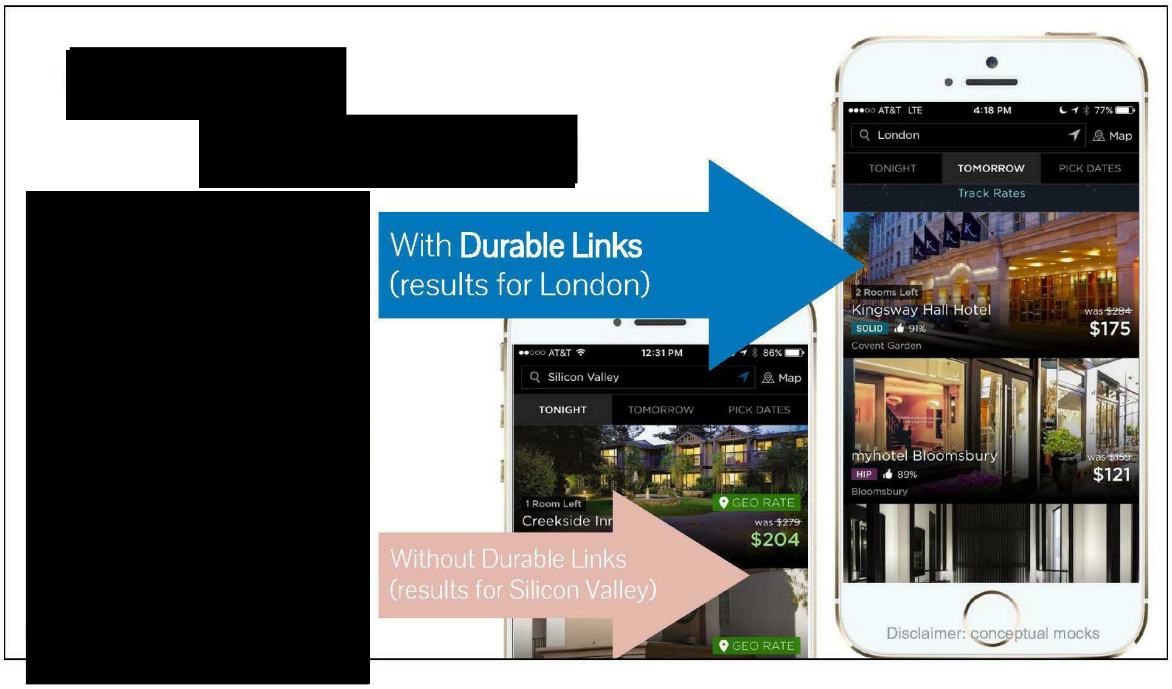
[redacted]

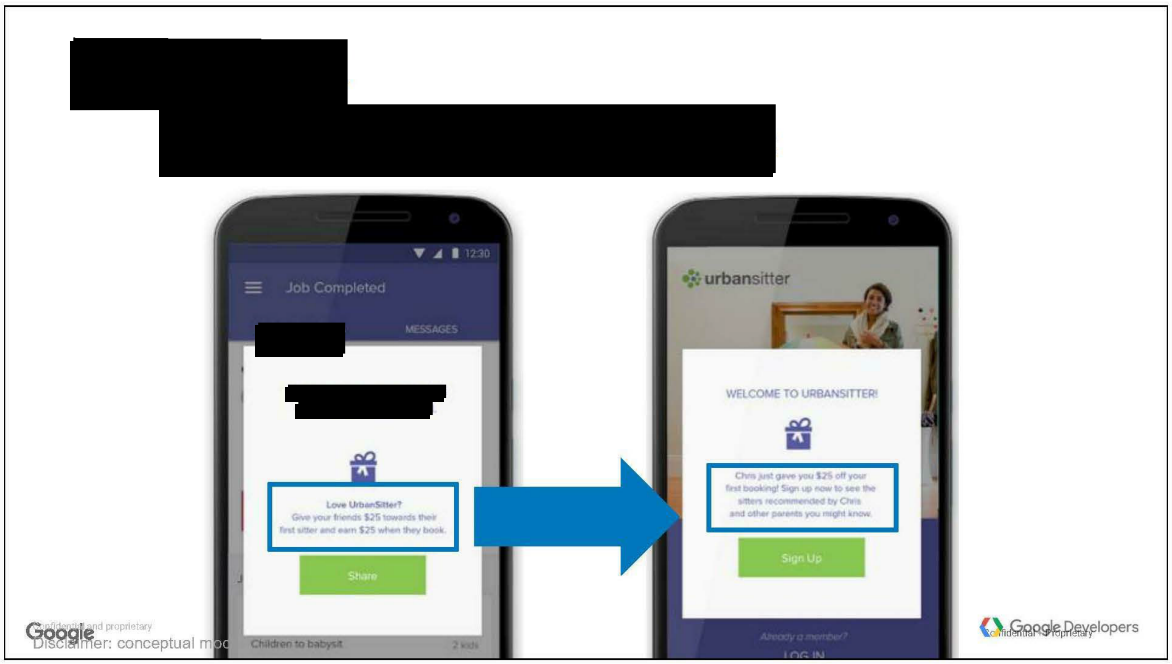
[redacted]

Google Confidential and proprietary

Disclaimer: conceptual mocks

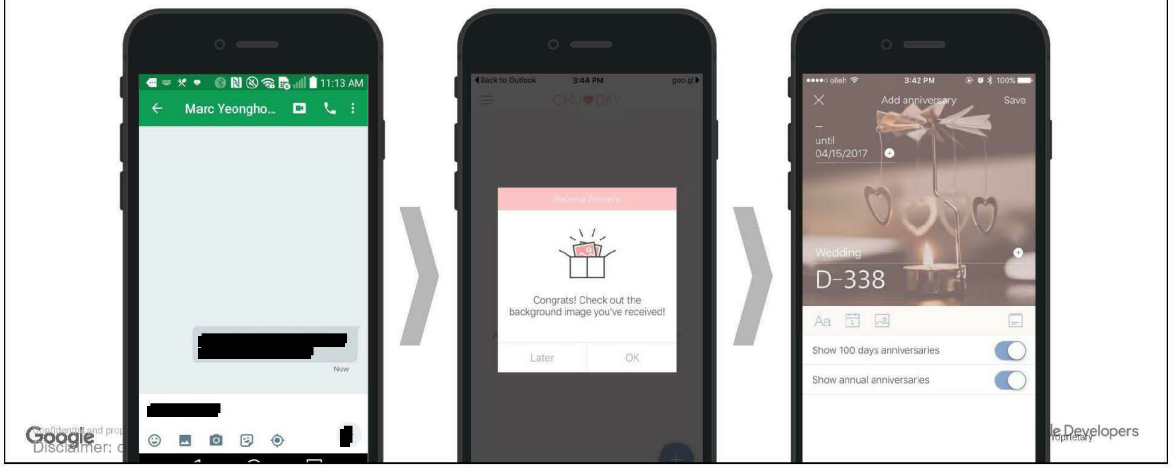
Developers

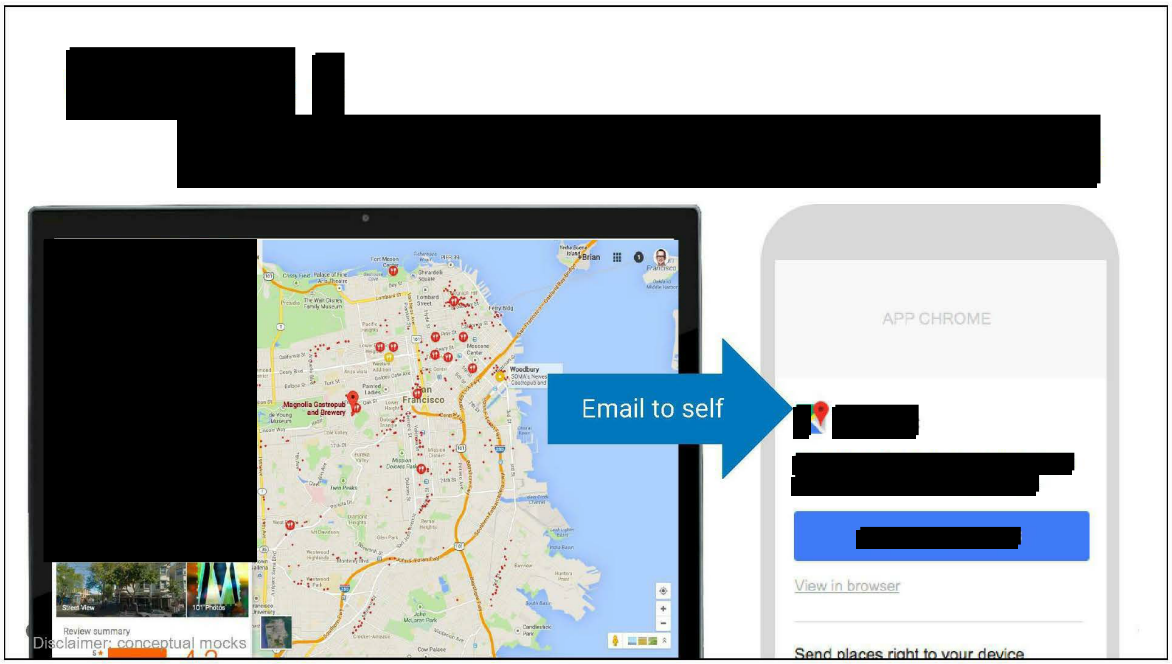

[redacted]
With Durable Links
(results for London)
Without Durable Links
(results for Silicon Valley)
Disclaimer: conceptual mocks


[redacted]
12:30
Job Completed
MESSAGES
[redacted]
Love UrbanSitter?
Give your friends $25 towards their first sitter and earn $25 when they book.
Share
Children to babysit
2 kids
urbansitter
WELCOME TO URBANSITTER!
Chris just gave you $25 off your first booking! Sign up now to see the sitters recommended by Chris and other parents you might know.
Sign Up
Already a member?
LOG IN
Google Developers

[redacted]

[redacted]




[redacted]
Email to self
APP CHROME
[redacted]
View in browser
Send places right to your device
Disclaimer: conceptual mocks

Roadmap: FDL Analytics

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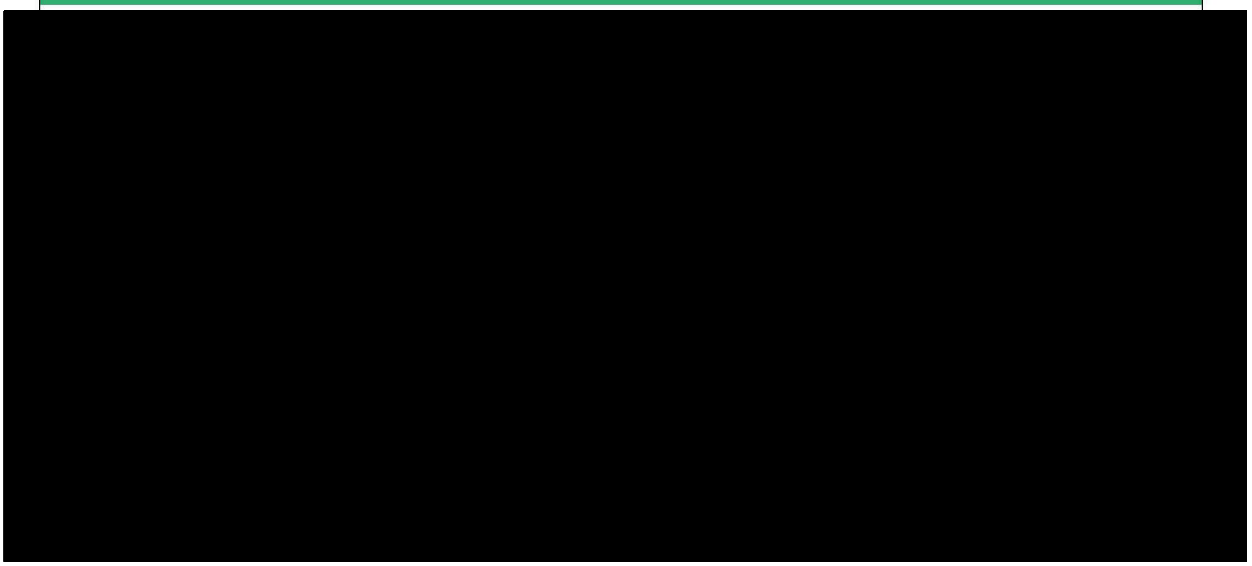
Roadmap: FDL Domain Settings



Roadmap: FDL Analytics

- [redacted]
- [redacted]
- [redacted]
- [redacted]

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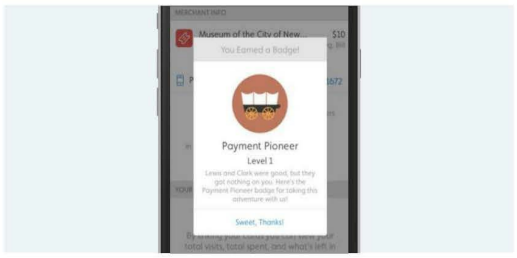
[redacted]

ACTIVATE: In-App Notifications

NEW In-app notifications

Customized messages to engage users within the app, to drive action



Jon

Subir

Google

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ACTIVATE: Remote Config

Safa

Tal

Daily Active Instances

[redacted]

Google

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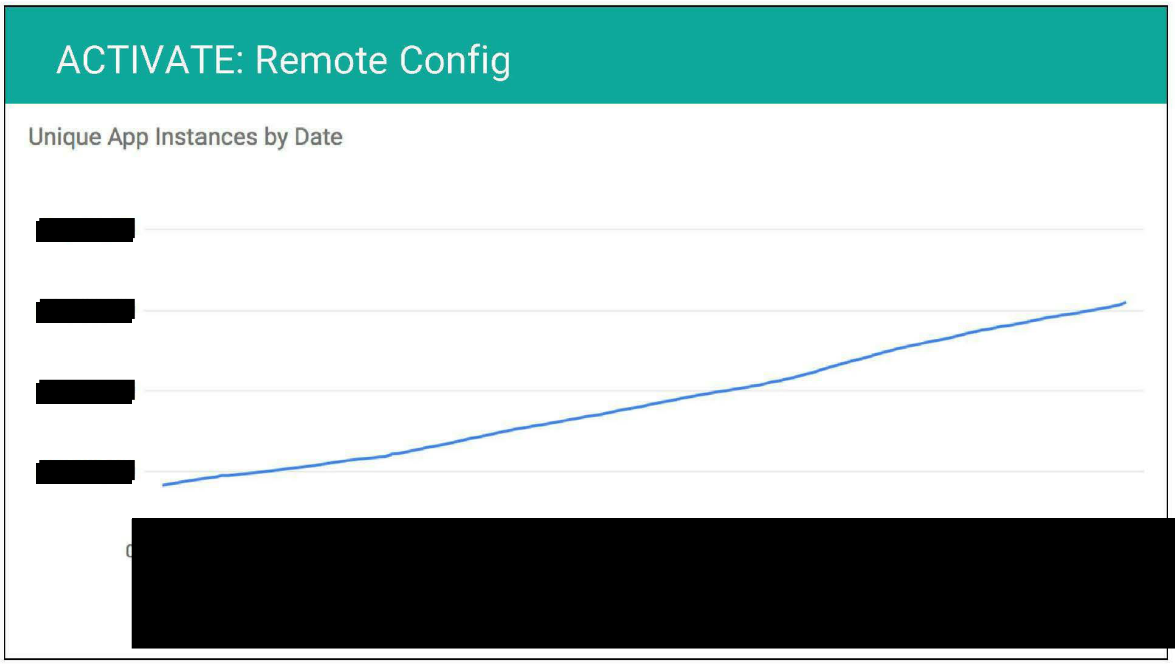
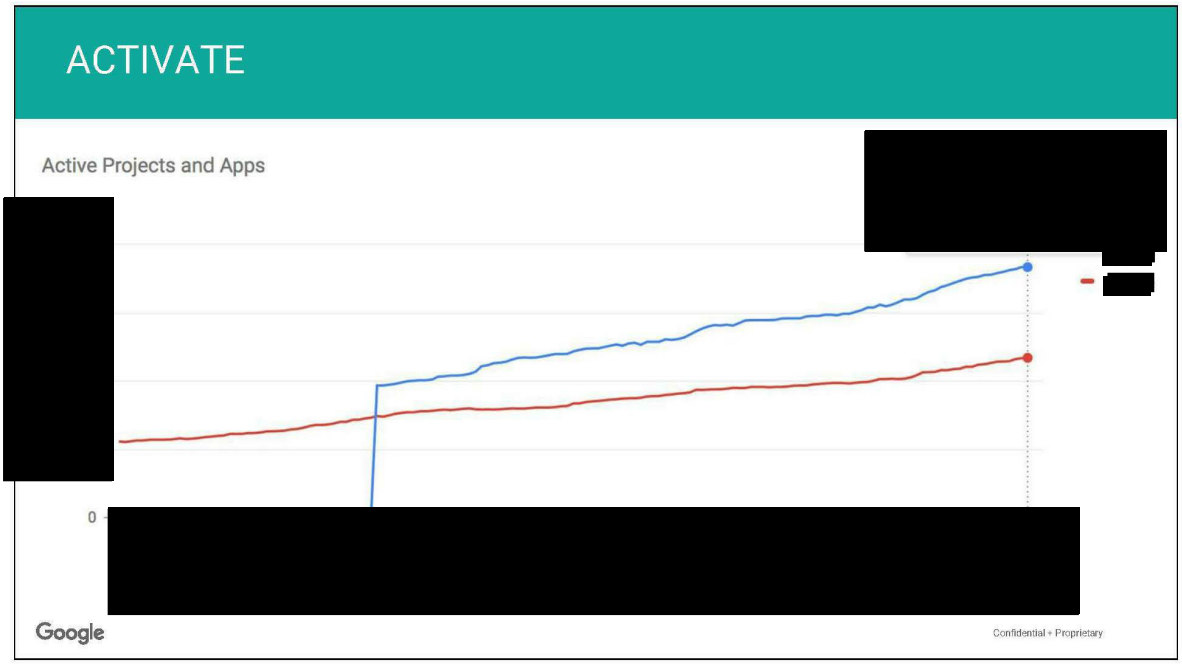

ACTIVATE: Remote Config
Unique App Instances by Date


ACTIVATE
Active Projects and Apps
[redacted]
0
[redacted]
Google
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ACTIVATE: Registry

- [redacted]
  - [redacted]
  - [redacted]
  - [redacted]
  - [redacted]
  - [redacted]
  - [redacted]
  - [redacted]
  - [redacted]

Google

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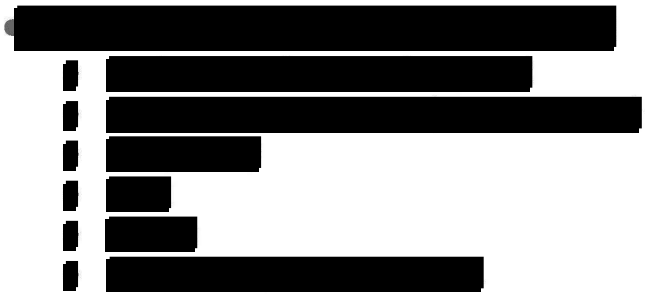
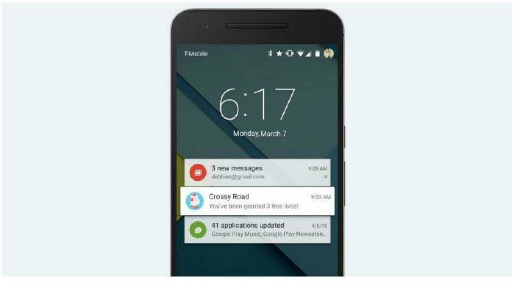
ACTIVATE: Registry



RETAIN: Firebase Cloud Messaging & Notifications

Notifications

Re-engage users via push notifications



Ian

Jon

Subir

Todd

Google

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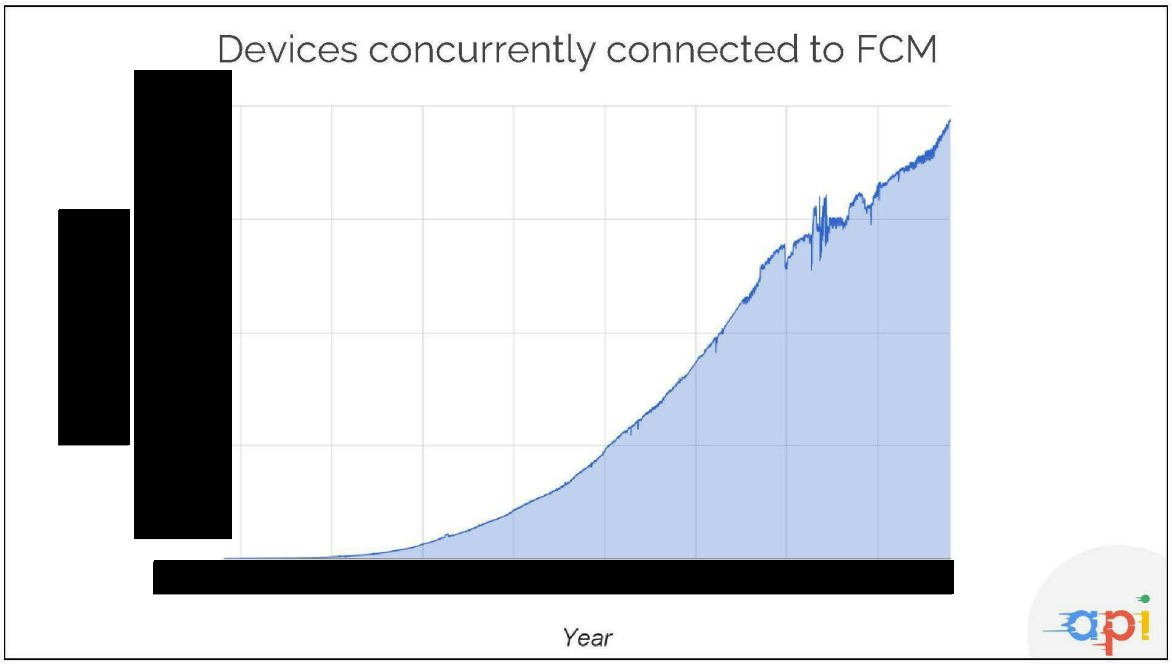
Firebase Cloud messaging is used by [redacted] helps them reach out to their users in real time. We reach out to [redacted] We process [redacted] every week



Since we launched the service in 2010 we have seen tremendous growth. We crossed [redacted]

So with this growth it is easy to overlook some small problems. [redacted] the population, you have some [redacted] When we built cloud messaging we did not expect such growth, not for android, nor for cloud messaging. [redacted]

[redacted]

Finding the right balance between [redacted] and [redacted]

Google

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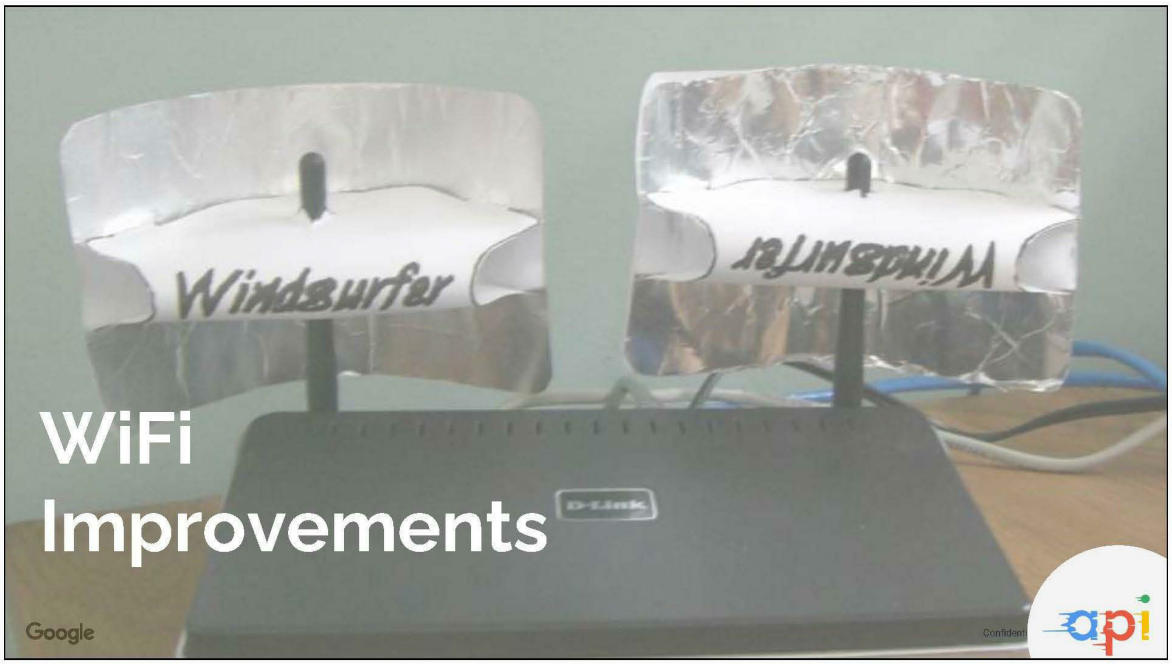
[redacted]



[redacted]

Turns out you just need a little bit of tinfoil.. Jk.

Constant int heartbeat

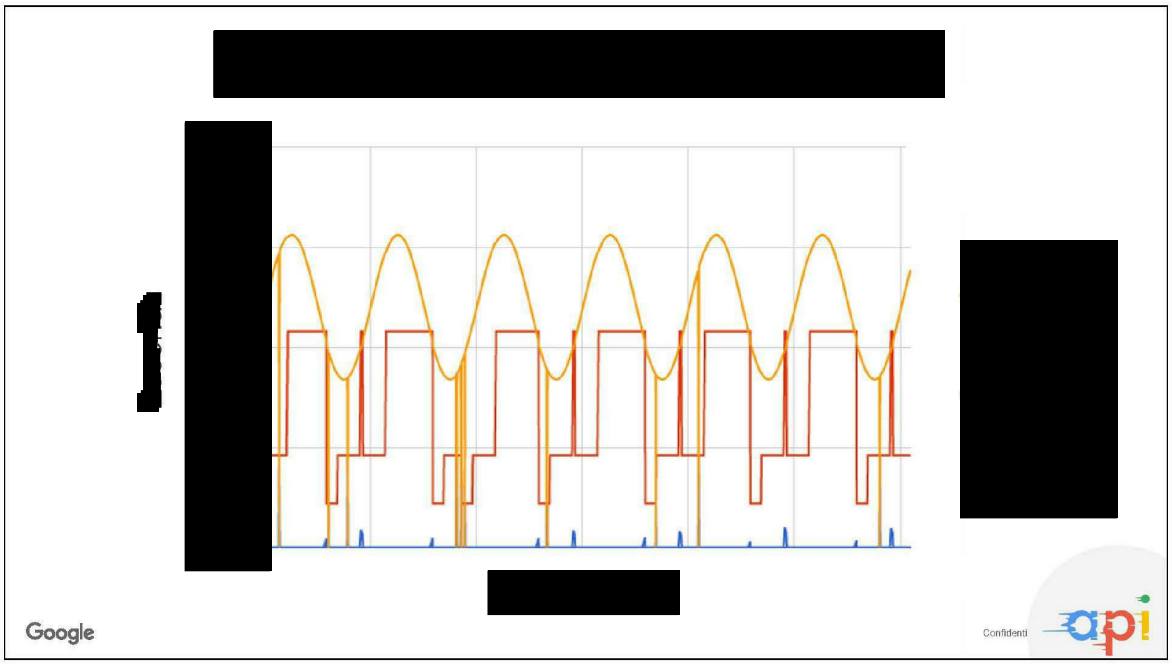
= 4 ~~15~~ mins

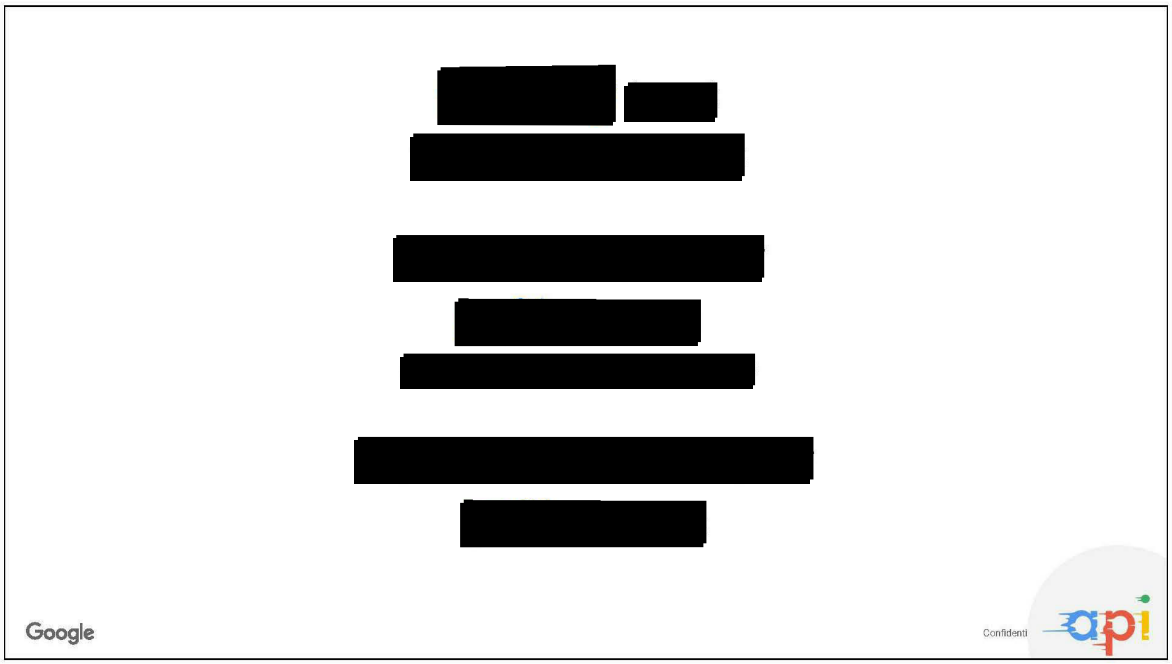
Time

Google

Confidenti

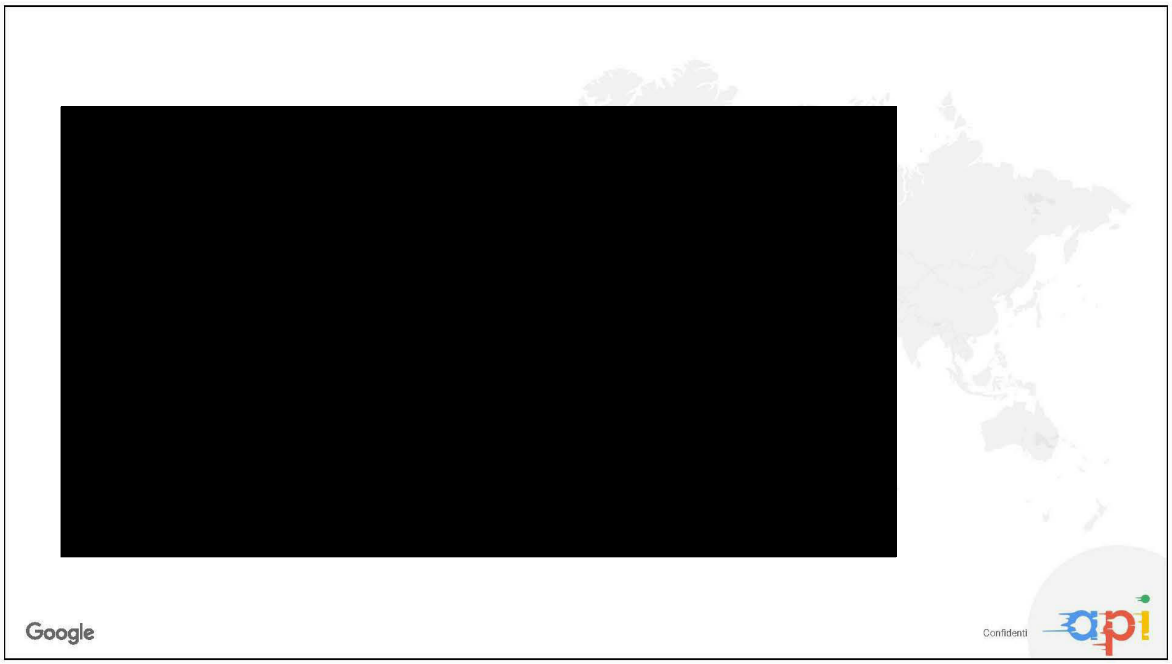
[redacted]


Google
Confidenti
api

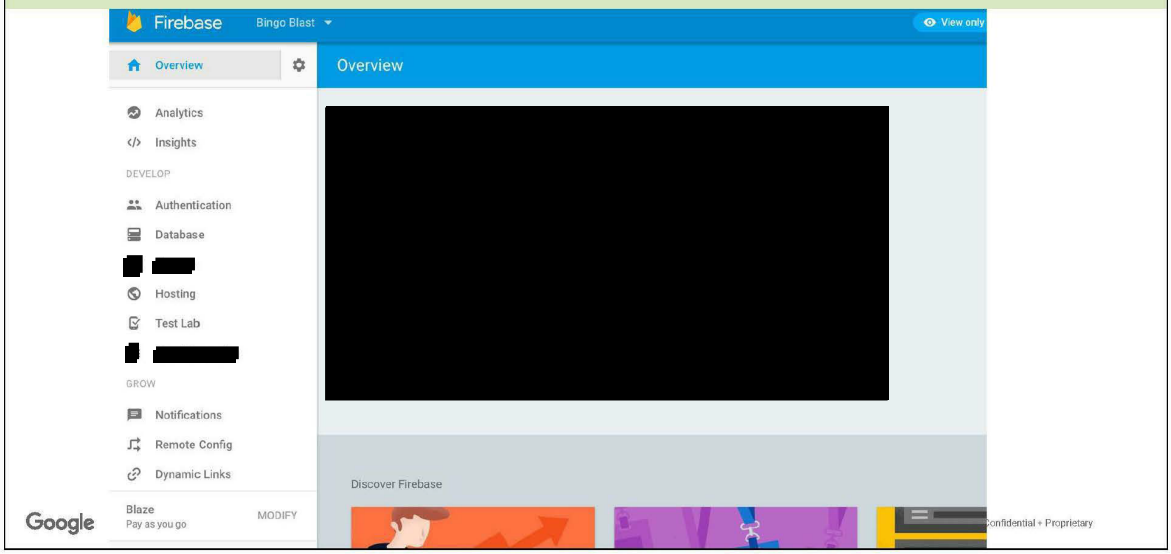

Google
Confidenti

Google
Confidenti
api

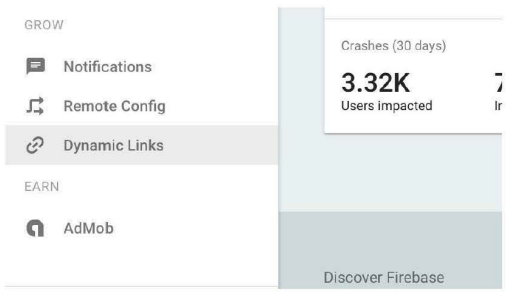
Google
Confidenti


Google
Confidenti
api

GROWTH: The Console



GROWTH: The Console



Ces

Ian

Keum Eun

Roman

Google

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GROWTH: The Console

- Firebase 2.0 Launch
  - All focus on Targeting
  - Conversion Events
  - Manual intervention
- Vision
  - [redacted]

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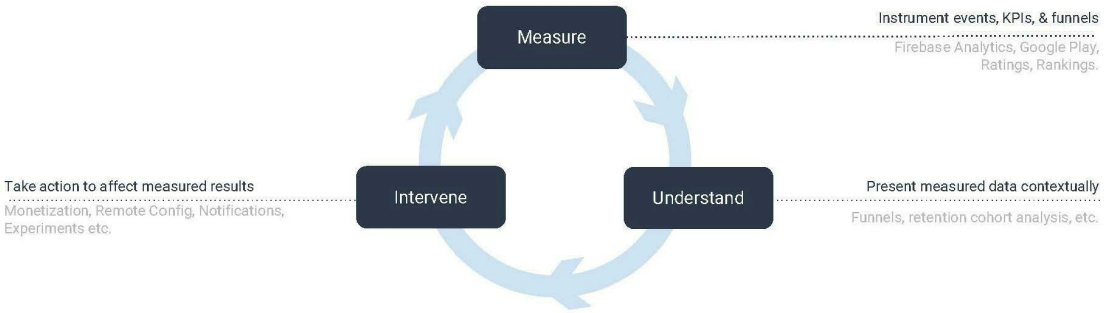
App Growth Framework

We think about managing **app growth** as a **continuous 3-phase cycle**



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UNDERSTAND: The Growth Dashboard

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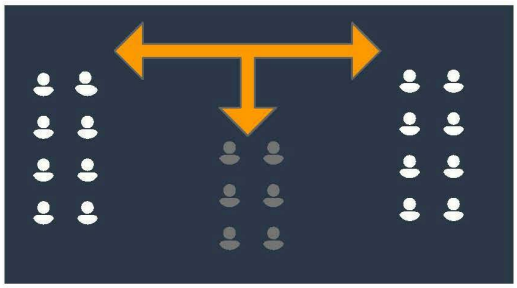
SEGMENTATION: AB Testing

A/B Testing

Test custom in-app experiences and let the best user experience



In Collaboration with Google Optimize

Safa

Tal

John Mesh

Jim Wogulis

Google

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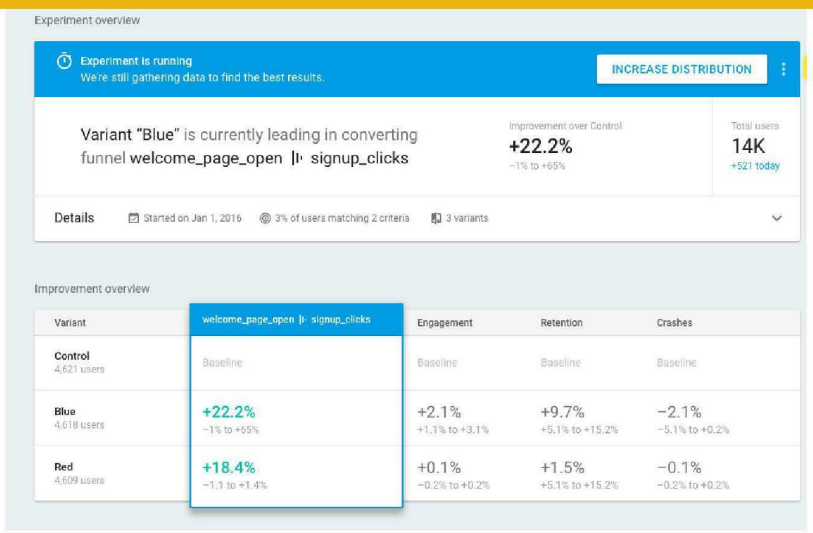
SEGMENTATION: AB Testing for Config



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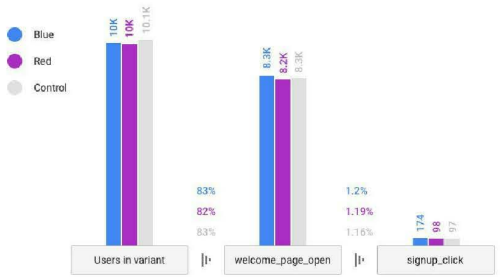
SEGMENTATION: AB Testing for Config

Variant	Improvement	Conversion rate range	Conversions	Probability to beat baseline	Probability to be best variant
Control 4,621 users	Baseline	47.4% 41.5% to 52.1%	2,429	Baseline	1%
Blue 4,618 users	+22.2% −1% to +65%	57.8% 51.2% to 61.3%	2,739	75.4%	95%
Red 4,609 users	+18.4% −1.1 to +1.4%	52.8% 50.2% to 61.3%	2,608	45.1%	4%



Google

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SEGMENTATION: AB Testing for Notifications

Variant	Improvement	Conversion rate range	Conversions	Probability to beat baseline	Probability to be best variant
Control 4,621 users	Baseline	47.4% ±3.1%	2,429	Baseline	1%
Message A 4,618 users	+22.2% −1% to +65%	57.8% ±2.2%	2,739	75.4%	95%
Message B 4,609 users	+18.4% −1.1 to +1.4%	52.8% ±3.3%	2,608	45.1%	4%

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INTELLIGENCE **Applied ML that make app success, simple**

NEW Predictions

Create predictions based on any analytics event and allow developers to use them to target notifications and customize in-app experiences through Remote Config

Subir

Jumana

Google

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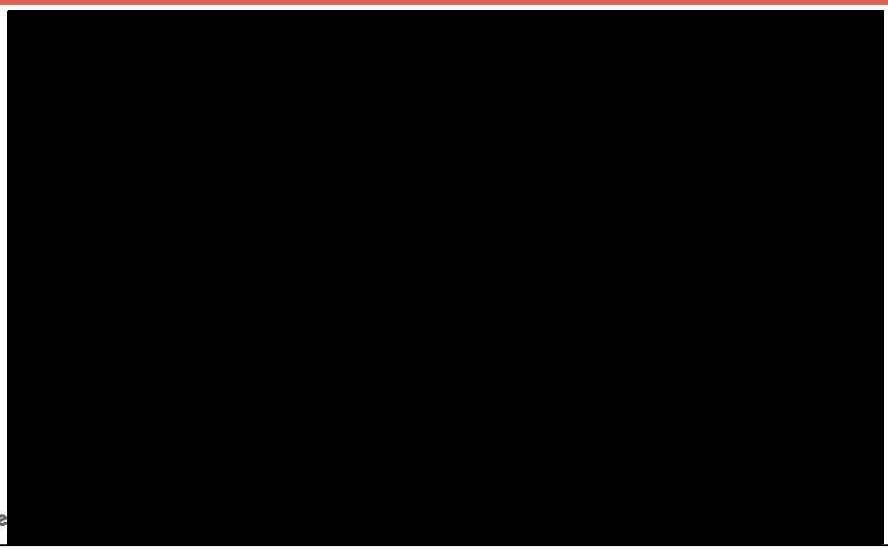
INTELLIGENCE Applied ML that make app success, simple



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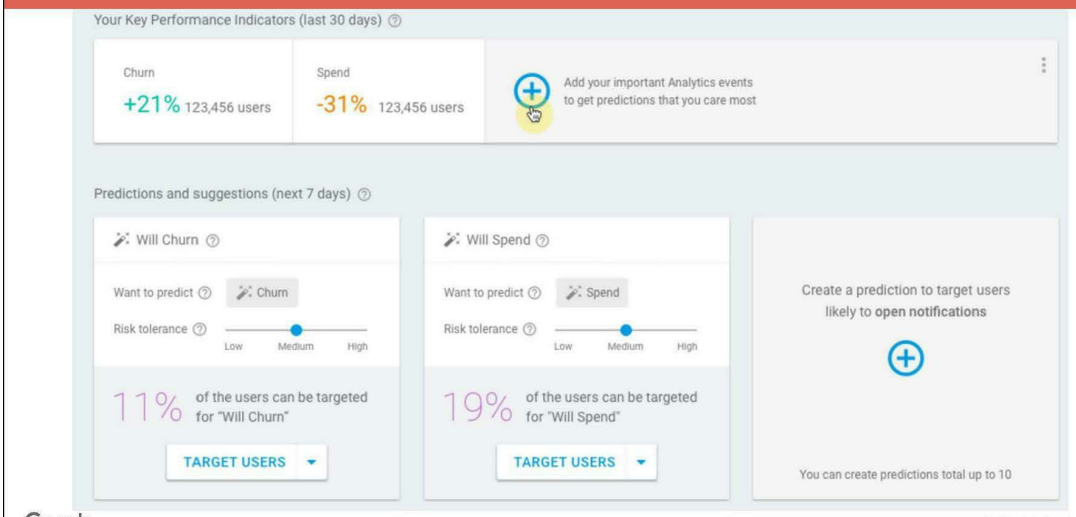
INTELLIGENCE **Applied ML that make app success, simple**



Google

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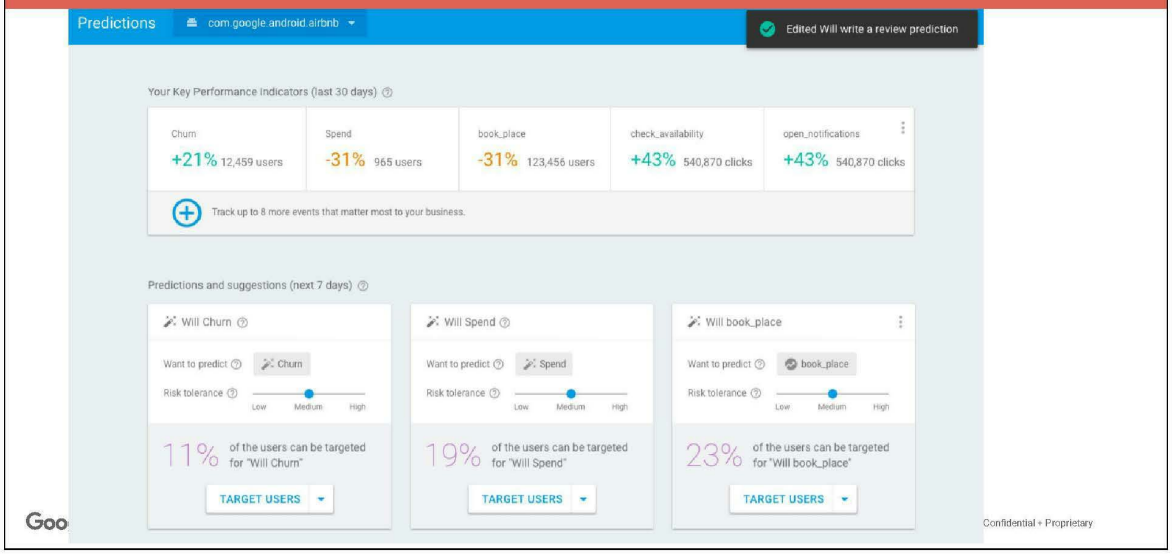
INTELLIGENCE Applied ML that make app success, simple



Thank You: Q&A